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# Introduction

Diabetes has an immense impact on public health and medical care in South Carolina. Diabetes is the sixth leading cause of death in South Carolina, claiming more than 1,089 lives each year. People with diabetes are at increased risk for blindness, lower extremity amputation, kidney failure, nerve disease, hypertension, ischemic heart disease, and stroke. Approximately 300,000 South Carolinians are affected by diabetes, many of who were still undiagnosed in 2001. One of every seven patients in a South Carolina hospital has diabetes. The total direct and indirect costs of hospitalizations and emergency room visits were over \$928 million in 2001. The burden of diabetes is more significant in minority and elderly groups.

This report is a description of the impact of diabetes, including trends, disparities, morbidity, mortality, and costs. The wide range of information presented here is intended to:

- Assist health care professionals and family members of persons with diabetes to understand more fully the scope of the disease in our state;
- Describe progress made in recent years with patient, physician, and other health provider education, and attempts to improve access to high quality self-management training for persons with diabetes; and
- Identify continuing needs and opportunities for diabetes control in South Carolina.

## METHODS

The data presented in this report were compiled from a variety of sources obtained mostly in 2001, including census data, vital records, hospital discharge data, emergency room records, the South Carolina Statistical Abstract and the Behavior Risk Factor Surveillance System (BRFSS). The former data sets are complete representations of events in South Carolina; however, the BRFSS is based upon a randomly selected, interview sample of South Carolinians over age 18 years.

There are limitations to the BRFSS data in terms of the representation of all regions of the state and all population groups. Rural and African-American persons are under-represented by the telephone interview system. The frequency of responses by a particular population group (e.g., 65 years and older African-American women) may be rather small, so in several instances multiple years of data were pooled, or regions of the state were combined to achieve reliable frequencies for this report. In that regard, the racial composition of the data is divided into two groups, based on the designation of the census [population-level] data as white and nonwhite. The nonwhite component of South Carolinians, which is about 30% of the state population, is about 96% African-American.

The data on hospitalizations and Emergency Room visits comes from the Inpatient and Emergency Room Discharge data sets collected and maintained by the Office of Research and Statistics of the South Carolina Budget and Control Board. These data sets are compiled from billing data supplied by all civilian instate hospitals. These datasets contain information on

admissions to hospitals and Emergency Rooms, including diagnoses, procedures performed, length of stay, and charges. These datasets, while extremely valuable in chronic disease surveillance, have their limitations. Because the hospital discharge data includes only hospital discharges from all in-state civilian hospitals, patients seeking health care in the hospitals outside the state or in the Veterans Administration system are not included in the data.

In recent years, some changes in the structure of the datasets have made comparisons of data with previous years impossible. In 2000, a change in policy limited the number of secondary ICD9 diagnosis codes available on the dataset to four data fields, as opposed to nine data fields in previous years. This artificially deflated the number of cases based on any given secondary diagnosis code and reflected, in some cases, decreases in numbers of admissions which were not valid.

## **Part I: The Burden of Diabetes in South Carolina**

### **Chapter One: Demographics and Access to Health Care**

South Carolina has experienced several dramatic changes in population in the past 10 years. These changes have a huge impact on the interpretation and evaluation of health statistics. Changes over the past 10-20 years in demographics, urban and rural environments, access to health care, and health professional coverage are presented in this chapter, setting the stage for and giving context to the data presented in the next three chapters.

### **Chapter Two: Risk Factors**

Diabetes is a slowly developing metabolic disease. The risk of diabetes

increases with age and in persons who have a family history of the disease or ones who belong to high-risk ethnic groups, for example, African Americans and Hispanics. Many behavioral factors contribute to the development of diabetes and its complications. The BRFSS collects information about a variety of modifiable behavioral risk factors for diabetes, and information about patterns of care seeking and utilization of care by persons with diabetes. These data are reviewed in the opening chapter with representations of trends over recent years, and across age, race, and gender groups among all South Carolinians.

### **Chapter Three: Morbidity**

Diabetes imposes a major impact on health care utilization and costs in South Carolina. This chapter describes the prevalence rate of diabetes across selected age, race and gender groups in South Carolina, with information about trends over time. Next, this chapter contains extensive data for the burden of diabetes on the medical care system in terms of hospitalizations, costs and lengths of stay. In addition, this chapter highlights data on a variety of diabetes-related complications, and conditions associated with higher risk in persons with diabetes. Also, this chapter contains information about the patterns observed for persons with diabetes related to emergency room visits. Diabetes among pregnant women and its impact on the outcomes of pregnancy is presented in this chapter, as well.

### **Chapter Four: Mortality**

Deaths from diabetes and diabetes-related conditions are described in this chapter, over time, and by population groups (race, gender). Topics such as years of potential life lost, and impact for infant mortality from maternal diabetes are also presented.

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## **Part II: Diabetes Initiative of South Carolina Strategic Plan Progress Report**

### **Chapter One: Diabetes Initiative of South Carolina**

The DSC objectives for controlling diabetes are directed to promoting greater attention from primary care providers for regular medical surveillance of persons with diabetes; taking appropriate actions, and improving greater recognition of patient's personal responsibility of people with diabetes. The main goal is to reduce the disparity for avoidable morbidity, mortality and risk factors that exist between whites and African-Americans with diabetes in South Carolina. The objectives for the DSC, which were set forth in the statewide plan for the control of diabetes, are listed in Part II of this report.

### **Chapter Two: Diabetes Data Resources**

The DSC and SCDPCP have made extensive efforts to identify groups and agencies working with persons with diabetes, whether in terms of patient education or clinical care, all across the state. The statewide resources for data and research are presented in this section, as well as information about how to contact these groups, and a list of state and national websites for diabetes data, education, care, and research.